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Notes on Kuhnistera.

By A. A. Heller.

Plate 262.

The genus *Kuhnistera* was published by Lamarck, in Encyclopedie Methodique, 3: 370 (1789), who based it upon the "Kuhniae affinis" or "Anonymos pinnat." of Walter, and gave it the name of *Kuhnistera Carolinensis*, from its resemblance to the genus *Kuhnia* of the Compositae. Walter, who did not know exactly where to place the plant, consigned it to his convenient *Anonymos*.

This in some respects peculiar plant has had an interesting history and a variety of names. Jussieu, in Gen. Pl. 355 (1789), under the description of *Dalea*, adds: "Speciam habeo siccam, habitu flosculosam Eupatorii instar sed Dalea fere congeneram cui calix communis polyphyllus imbricatus multiflorus, calix proprius inferus 5-partitus plumosus, petala 5 subaequalia unguiculata, caetera similia."

This is followed by an observation of Ventenat, in Tab. 3: 395 (1794) under *Kuhnistera Carolinensis*, who says that the plant of which Jussieu gave a short description, after having presented the characters of *Dalea*, is, according to Michaux, this Anonymos of Walter; *Kuhnistera* differs above all from the genera following by the disposition of the flowers in a corymb, by its involucre and by the plumose divisions of the calyx proper. The genera following are *Dalea* and *Psoralea*. The reference to Michaux evidently

means that the information was given either verbally or by correspondence, as they were co-workers.

Michaux, in Fl. Bor. Am. **2**: 50 (1803), described the genus *Petalostemum*, taking as types *P. albidum, pl. 37, f. 1*, and *P. violaceum, pl. 37, f. 2*. Under it he included *Kuhnistera Carolinensis* Lam., calling it *P. corymbosum*.

Willdenow, in Sp. Pl. 1338 (1803), issued subsequent to Michaux's Flora, places the plant under *Dalea*, and calls it *Dalea Kuhnistera*, taking his characters from Ventenat, the latter clause of whose description reads: "Quodlibet florum, capitulum magnobractearum numero est tectum, quae calycem communem quasi repraesentant et totae plantae habitum Eupatorii conciliant."

Poiret, in Lam., Encycl. **5**: 694 (1804), calls it *Psoralea corymbosa*. After mentioning the corymbose heads, he adds: "They are provided with large oval bracts, scales, almost like an involucre, at the base of the flowers."

Pursh, in Fl. Am. Sept. 462 (1814), takes up the name *Petalostemon corymbosum*, of Michaux, and remarks: "This singular plant appears, at first sight, to belong to the class Syngenesia (Compositae), and certainly is the connecting link between that class and the present."

De Candolle, in Prodr. **2**: 244 (1825), assigns it to a section Kuhnistera, of *Petalostemon*, and asks: "An genus proprium?"

Bartling, in Ord. Nat. Pl. 410 (1830), treats *Kuhnistera* and *Petalostemon*, as separate genera.

Don, in Gen. Syst. **2**: 222 (1832), follows De Candolle, and quotes him throughout.

Torrey and Gray, in Fl. N. Am. **1**: 312 (1838), say, speaking of *Petalostemon corymbosus*: "This species, on account of its habit, its large involucrate bracts, deeply divided and plumose calyx, and narrow petals, has been separated as a distinct genus, but scarcely on sufficient grounds, for several other species have a similar calyx and very narrow petals and in *P. multiflorum* the stem is somewhat corymbosely branched. There is no other species, however, with similar spikes."

Endlicher, in Gen. Pl. 1270 (1840), divides *Petalostemon* into two sections, Eupetalostemon and Kuhnistera.

Lindley, in Veg. King. Ed. 3, 554 (1853), considers *Kuhnistera* and *Petalostemon* as separate genera.

With the idea of finding sufficient characters to separate *Kuhnistera* of Lamarck from *Petalostemon* of Michaux, I have spent some time in hunting up the literature of the subject. As will be seen from the extracts given above, botanists since the time of Michaux who were really acquainted with the plants which they described have maintained but one genus, some of them making a section of *Kuhnistera*.

My own examinations of the different species have failed to establish enough constant differences to separate them into two genera. The plant of Walter is strikingly different in its general appearance from the other species, but the differences are of degree rather than of kind. All of the species have a greater or less number of empty bracts at the base of the flower-head. In *pinnata* these are broadly ovate or almost orbicular, especially the outer row, which usually bears small leaflets. If these outer empty bracts were constant and of a different shape from the inner ones we would have a good character, but they are not. The outermost bracts are almost obicular, the innermost oblong, with a gradual transition from the one to the other, as we proceed from the outside to within.

The narrow petals and slender plumose calyx-lobes can hardly be considered sufficient ground for generic distinction, for as noted by Torrey and Gray we have these conditions in several other species, although no other species has the calyx-lobes so long in proportion to the length of the tube.

Unless better and more constant characters can be found to keep up to distinct genera, the latter name of *Petalostemon* Michaux must give way to *Kuhnistera* of Lamarck, as set forth by Kuntze, in Rev. Gen. Pl. 192 (1891).

The following is a provisional list of the species as known to me at the present time, and is printed preliminary to a descriptive monograph of the genus.

KUHNISTERA Lam. Encycl. 3: 370. 1789.

KUHNISTERA CANDIDA (Michx.) Kuntze, Rev. Gen. Pl. 192. 1891.

Petalostemon candidum Michx. Fl. Bor. Am. 2: 49. 1803.
Dalea candida Poir. in Lam. Encycl. 5: 694. 1804.

Petalostemon virgatum Nees & Schwein., in Neuwied, Reise Nord. Am. **2**: 432. 1839.

A Mississippi Valley species, occurring in Minnesota, Wisconsin, Illinois, Nebraska, Kansas, Kentucky, Tennessee, Mississippi, Louisiana, and in the Saskatchewan region, where it was collected by Bourgeau.

KUHNISTERA CARNEA (Michx.) Kuntze, Rev. Gen. Pl. 192. 1891.

Petalostemum carneum Michx. Fl. Bor. Am. **2**: 49. 1803.

Psoralea carnea Poir. in Lam. Encycl. **5**: 694. 1804.

Dalea carnea Spreng. Syst. **3**: 326. 1826.

Petalostemon roseum Nutt. Amer. Journ. Sci. (I.) **5**: 298. 1822.

Georgia and northern Florida. Nuttall's *P. roseum* does not seem to be distinct from this species.

KUHNISTERA COMPACTA (Spreng.) Kuntze, Rev. Gen. Pl. 192. 1891.

Dalea compacta Spreng. Syst. **3**: 327. 1826.

Petalostemon macrostachyum Torr. Ann. Lyc. N. Y. **2**: 176. 1828.

Petalostemon compactus Swezey, Neb. Fl. Pl. 6. 1891.

Nebraska and Colorado.

KUHNISTERA DECUMBENS (Nutt.) Kuntze, Rev. Gen. Pl. 192. 1891.

Petalostemon decumbens Nutt. Journ. Acad. Phila. **7**: 93. 1834.

Northeastern Texas.

KUHNISTERA EMARGINATA (T. & G.) Kuntze, Rev. Gen. Pl. 192. 1891.

Petalostemon emarginatum T. & G. Fl. N. Am. **1**: 311. 1838.

A Texan species.

KUHNISTERA EXILIS (A. Gray) Kuntze, Rev. Gen. Pl. 192. 1891.

Petalostemon exilis A. Gray, Pl. Wright. **2**: 41. 1893.

New Mexico, Arizona and Mexico. The bracts of this plant are like those of true *Dalea*, but there are only five stamens, having the structure of those of *Kuhnistera*. As stated by Gray in the original description, "The lowest bracts broader and less subulate-pointed than the upper," in this respect having the same character as *K. pinnata*.

KUHNISTERA FEAYI (Chapm.) Nash, Bull. Torr. Club, **22**: 149. 1895.

Petalostemon Feayi Chapm. Fl. States, Suppl. 615. 1884.

Apparently confined to central Florida. It is close to *K. carnea*, but seems to be distinct.

KUHNISTERA FLAVESCENS (S.Wats.) Kuntze, Rev. Gen. Pl. 192. 1891.
Petalostemon flavescens, S. Wats. Amer. Nat. 7: 299. 1873.

KUHNISTERA FOLIOSA (A. Gray) Kuntze, Rev. Gen. Pl. 192. 1891.
Petalostemon foliosus A. Gray, Proc. Amer. Acad. 7: 336. 1868.
Illinois and Tennessee.

KUHNISTERA GATTINGERI n. sp.

Perennial, stems a foot in length or more, usually branching from the base, sometimes decumbent, sparingly glandular and pubescent, sometimes villous on the peduncles; leaflets two or three pairs, narrowly linear or oblong, one-half to three-fourths of an inch long, one line in width or less, dull and glandular on the upper side, light green beneath, the mid-vein prominent; spikes on rather short peduncles, cylindrical, loose, especially when old, one inch to two and a half inches long; bracts slightly longer than the calyx, oval-lanceolate, slender-pointed, glandular, pubescent; calyx pubescent with spreading hairs, the lanceolate lobes slightly shorter than the tube and more pubescent; petals deep rose-purple; ovary and base of style pubescent.

This plant has been distributed as *Petalostemon decumbens* Nutt., but Nuttall's type, collected "on the plains of the Red River," is preserved in the herbarium of Columbia University, and is a very different species. I take pleasure in dedicating it to Dr. A. Gattinger, who first collected it about Nashville and Lavergne, Tenn. Some of his specimens are in Curtiss' North American Plants, no. 565. Dr. Chas. Mohr has also collected it at Russelville, Ala., a form with somewhat laxer inflorescence, and more pubescent calyx.

KUHNISTERA GRACILIS (Nutt.) Kuntze, Rev. Gen. Pl. 192. 1891.
Petalostemon gracile Nutt. Journ. Acad. Phila. 7: 92. 1834.
Petalostemon bicolor Bertol. Bot. Zeit. 9: 902. 1842–51. Fide A. Gray.

A species of the gulf coast extending from Florida to Louisiana. The majority of the plants which are in herbaria labeled *Petalostemon gracile* belong to *K. oligophylla*. True *gracilis* has not been found outside of the range given.

KUHNISTERA GRISEA (T. & G.) Kuntze, Rev. Gen. Pl. 192. 1891.
Petalostemon griseum T. & G. Fl. N. Am. 1: 310. 1838.

Texas and Indian Territory.

Petalostemon luteolus S. Wats., is *P. Sabinalis* S. Wats. Although the name *luteolus* appears in Patterson's Check-List, it has no foundation, being a label name given to a specimen of *P. Sabinalis.*

KUHNISTERA MICROPHYLLA (T. & G.).

Petalostemon phleoides var. *microphyllum* T. & G. Fl. N. Am. 1: 310. 1838.

The much smaller and more numerous leaflets, as well as the pubescence, readily separate this plant from *K. phleoides.*

A Texan species.

KUHNISTERA MULTIFLORA (Nutt.) Heller, Mem. Torr. Club, 5: 197. 1894.

Petalostemon multiflorum Nutt. Journ. Acad. Phila. 7: 92. 1834.

Kuhnistera candida var. *multiflora* Rydberg, Cont. U. S. Nat. Herb. 3: 54. 1895.

The corymbose and capitate inflorescence of this species debar it from being classed with *K. candida.* The ovate bracts, shorter than the calyx, although of lesser importance, do not agree with *candida* either, as shown by Mr. Rydberg's description. There is only one other species in the genus, *K. pinnata,* which is corymbosely branched. I have seen specimens from Kansas, Indian Territory and Texas only.

KUHNISTERA OBOVATA (T. & G.).

Petalostemon obovatum T. & G. Fl. N. Am. 1: 310. 1838.

Dalea agastachya Moric. Pl. Nouv. 65. *pl. 44.* 1839.

Kuhnistera agastachya Kuntze, Rev. Gen. Pl. 192. 1891.

In Mem. Am. Acad. (Plantae Fendlerianae) 4: 33 (1849), Dr. Gray says in a foot note: "*Dalea agastachya* Moric. Pl. Nouv. Amer. *pl. 44* (1839) is *Petalostemon obovatum* T. & G.," thus proving conclusively that *obovatum* is the earlier name. Moricand's work was issued in parts, dating from 1833–46.

A Texan species.

KUHNISTERA OLIGOPHYLLA (Torr.).

Petalostemon gracile var. *oligophyllum* Torr. in Emory's Mil. Rec. 139. 1848.

Kuhnistera occidentalis Heller, Trans. N. Y. Acad. Sci. 14: 33. F. 1895.

Kuhnistera candida var. *occidentalis* Rydberg, Cont. U. S. Nat. Herb. 3: 154. S. 1895.

The Mexican Boundary Survey of Emory having been confused with the work cited above, the identity of this species was only recently established. The type, but unnamed, is in the herbarium of Columbia University. On a small slip of paper pasted upon the sheet is recorded in Torrey's hand "Emory, Sept. 28th, 1846. Valley of Del Norte." By referring to the journal, we find that on September 28, 1846, the expedition was near Albuquerque, New Mexico. Specimens from Arizona, New Mexico, Kansas, Indian Territory and South Dakota are typical, and readily distinguished from *K. candida* by the lax inflorescence, blunt spikes, and smaller, thicker and more obtuse leaflets, but in Nebraska there are some forms which approach *candida*. It has a more western and southwestern range than any other of the white-flowered species. In the lower part of its range, *candida* is not found far from the Mississippi river, and the typical plant is found only from the original region, Tennessee, Illinois and northward.

KUHNISTERA ORNATA (Dougl.) Kuntze, Rev. Gen. Pl. 192. 1891.

Petalostemon ornatus Dougl.; Hook. Fl. Bor. Am. 1: 138. 1830.

Dalea ornata Eaton & Wright, 219. 1840.

Petalostemon macrostachys T. & G. Fl. N. Am. 1: 309. In part. 1838.

An Oregon species.

KUHNISTERA PHLEOIDES (T. & G.) Kuntze, Rev. Gen. Pl. 182. 1891.

Petalostemon phleoides T. & G. Fl. N. Am. 1: 310. 1838.

Petalostemon glandulosus Coult. & Fish. Bot. Gaz. **18**: 299. 1893.

A comparison of the type of *phleoides* and a duplicate type of *glandulosus*, both of which are in the Columbia University herbarium, clearly shows them to be identical. The oblique calyx is a marked character in this species.

Texas.

KUHNISTERA PINNATA (Walt.) Kuntze, Rev. Gen. Pl. 192. 1891.

Anonymos pinnat. Walt. Fl. Car. 103. 1788.

Kuhnistera Carolinensis Lam. Encycl. 3: 370. 1789.

Petalostemum corymbosum Michx. Fl. Bor. Am. 2: 50. 1803.

Dalea Kuhnistera Willd. Sp. pl. **3**: 1337. 1803.

Psoralea corymbosa Poir. in Lam. Encycl. **5**: 694. 1804.

Cylipogon virgatum Raf. Journ. Phys. **89**: 97. 1819.

Gatesia Alabamensis Bertol. Bot. Zeit. 899. 1842–51.

In the coast region from North Carolina to Alabama.

KUHNISTERA PULCHERRIMA Heller, Cont. Herb. F. & M. Coll. **1**: 50. *pl.* 2. 1895.

Petalostemon virgatum Scheele, Linnaea, **21**: 401. 1848. Not Nees, 1839.

North central Texas.

KUHNISTERA PURPUREA (Vent.) MacM. Met. Minn. Val. 32. 1892.

Dalea purpurea Vent. Hort. Cels. *pl.* 40. 1800.

Petalostemum purpureum Michx. Fl. Bor. Am. **2**: 50. *pl. 37. f. 2.* 1803.

Dalea violacea Willd. Sp. Pl. **3**: 1337. 1803.

Psoralea purpurea Poir. in Lam. Encycl. **5**: 694. 1804.

Northwest Territory, Saskatchewan, Dakota, Minnesota, Nebraska, Illinois, Missouri, Kansas and Arkansas.

KUHNISTERA REVERCHONI (S. Wats.).

Petalostemon Reverchoni S. Wats. Proc. Am. Acad. **21**: 449. 1886.

A species of northern Texas.

KUHNISTERA SABINALIS (S. Wats.).

Petalostemon Sabinalis S. Wats. Proc. Am. Acad. **21**: 448. 1886.

Bandera County, southwestern Texas.

KUHNISTERA SEARLSIAE (A.Gray) Kuntze, Rev. Gen. Pl. 192. 1891.

Petalostemon Searlsiae A. Gray, Proc. Am. Acad. **8**: 380. 1873.

Nevada, the original locality, and Arizona.

KUHNISTERA TENUIFOLIA (A. Gray) Kuntze, Rev. Gen. Pl. 192. 1891.

Petalostemon tenuifolius A. Gray, Proc. Am. Acad. **11**: 73. 1876.

Arkansas, New Mexico, Arizona.

KUHNISTERA TENUIS (Coulter).

Petalostemon violaceus var. *tenuis* Coulter, Cont. U. S. Nat. Herb. **1**: 34. 1890.

This is a very good species, quite distinct from the *Petalostemon violaceus*, which has been made dumping ground of various red-flowered species which are not at all related to it. This species is much more closely related to *Reverchoni* than to *purpurea*.

Coleman county, southeastern Texas.

KUHNISTERA VILLOSA (Nutt.) Kuntze, Rev. Gen. Pl. 192. 1891.

Petalostemon villosum Nutt. Gen. 2: 85. 1818.

Dalea villosa Spreng. Syst. 3: 326. 1826.

Sackatchewan, Minnesota, South Dakota, Nebraska, Kansas.

Studies in the Botany of the Southeastern United States.—V.

By JOHN K. SMALL.

ASPLENIUM BRADLEYI D. C. Eaton, Bull. Torr. Club, 6: 11. 1873.

Although not extending the known geographic area, King's and Crowder's mountains, N. C., furnish two more stations for this rare fern. I found it on the two isolated peaks just mentioned, in th summer of 1894; it grew both on the cliffs at the summits and in crevices on large boulders on the slopes and at the base of the mountains. The leaves varied from less than one decimeter to between two and three decimeters in length.

PIAROPUS CRASSIPES (Mart.) Britton, Ann. N. Y. Acad. Sci. 7: 241. 1893.

Mr. A. H. Curtiss informs me that this plant escaped from cultivation a few years ago and has now become a serious obstruction to navigation in the tributaries of the St. John's river. It has established itself in other parts of Florida.

IRIS CAROLINIANA S. Wats. in A. Gray, Man. Ed. 6, 514. 1890.

In the spring of 1893 great quantities of this lately described *Iris* were found east of the great Dismal Swamp in Virginia by Dr. Britton and myself. During the spring of 1894 Tracy and Earle secured good fruiting specimens at Pointe du Chene, Louisiana (no. 2898), and last summer I found it very common in the swamps about Macon, Georgia, and throughout the middle part of that state.

MYRICA PUMILA (Michx.).

Myrica cerifera var. *pumila* Michx. Fl. Bor. Am. 2: 228. 1803.

It seems strange that this so-called variety of *Myrica cerifera* has never before been given specific rank.

CASTANEA NANA Muhl. Cat. 86. 1813.

Mr. Kearney has recently given us an excellent description* of this characteristic chinquapin. He omitted, however, the most striking character of the species. During last July and August I had an opportunity to observe *C. nana* at various points in southeastern Georgia, where it is plentiful and distributed in large patches over the hot sandy wastes. In its relatives, *Castanea dentata* and *C. pumila*, we find typical trunks or main stems developed above ground, but in the case of *C. nana* the main stem never rises to the surface of the soil, but grows along at the depth of one or several inches beneath the surface, sending up lateral branches at intervals. A comparative study of the anatomy of this stem would doubtless prove interesting.

ARISTOLOCHIA NASHII Kearney, Bull. Torr. Club, 21: 485. 1894.

Last July I collected good fruiting specimens of this plant along the Flint River, below Albany, Ga. The species is readily separable from the related *A. Serpentaria* by its more deeply lobed capsule, which is just about one-half as long. Mr. A. H. Curtiss has sent me specimens which he gathered in northeastern Florida several years ago.

PORTULACA CORONATA n. sp.

Rather stout, succulent, glabrous and somewhat shining, the roots fibrous, descending and freely branching; stem simple and erect, or diffusely branched from 1 or 2 cm. above the root, nearly terete, its branches spreading and ascending, bright flesh-colored or magenta, rarely lead-colored, the branches usually alternate, sometimes almost opposite, conspicuously articulated with the stem, the ends clavate and more or less tinged with green; leaves sessile or nearly so, the lower ones usually oblanceolate, the upper ones oblong or oblong-lanceolate, alternate, except a whorl of from three to eight at the ends of the branches, flat, obtuse or rarely acutish, conspicuously articulated with the stem, somewhat fugacious, bright green, inconspicuously ciliolate with depressed

* Bull. Torr. Club, 21: 261.

trichomes; midrib rather indistinct; flowers about 5 mm. broad, yellow; sepals 2 mm. long, triangular, sometimes broader than high, obtuse, hooded at the apex; petals small, 2 mm. long, ovate or oblong-obovate, obtuse, marked with five or seven nerves; stamens eleven or twelve; pistil 2 mm. long, three to four-cleft, the segments obovate or spatulate, well covered with stigmatic processes; capsule hemispheric or turbinate-hemispheric, 2–3 mm. long, 5 mm. in diameter, surmounted by a conspicuous crown, developed from the edge of the calyx where the lid joins the capsule; lid flattish, not crested, sometimes slightly depressed in the center; seeds twenty to forty, cochleate, gray, covered with acute or acutish pyramidal papillae.

Collected in September, 1894, just below the summit of Little Stone Mountain, De Kalb County, Georgia. It grows in company with *P. pilosa* in shallow depressions which have become partially filled with a sandy soil by the disintegration of the granite. There is a great contrast between it and the last named species, the plants are usually stouter, less dense in habit and the stems and branches bright magenta, whilst those of *P. pilosa* are of a light or dark shade of green. It is more closely allied to *P. lanceolata* Engelm. of southern and western Texas, from which it differs in the smaller flowers, and the sessile or nearly sessile leaves. The leaves are also different in shape and are never acute. The petals are not like those of *P. lanceolata*, and unfold in cultivated specimens about eight o'clock in the morning.

TWO SPECIES OF HIBISCUS.

Dr. Gray, in revising this genus for the Synoptical Flora, and in the fifth edition of his Manual, merged Michaux's *H. grandiflorus* into *H. lasiocarpus* of Cavanilles. It is difficult to understand on what grounds he did this, as the two species are so strikingly dissimilar. A comparison of their diagnostic characters is here given.

HIBISCUS LASIOCARPUS Cav. Diss. 3: 159. *pl.* 70. *f.* 1. 1787.

Hibiscus grandiflorus A. Gray, Man. Ed. 5, 102. 1867. Not Michx.

Stem pubescent, leaves ovate, the upper surface clothed with a dense pubescence consisting of long branched strigose-like hairs with a metallic or brownish-green tinge, the lower surface somewhat paler and less densely pubescent; calyx inconspicuously ribbed; bractlets as long as the calyx or longer, pectinate-

ciliate; petals 6–8 cm. long; style slender, its branches not arising from the same point.

HIBISCUS GRANDIFLORUS Michx. Fl. Bor. Am. **2**: 46. 1803.

Stem glabrous; leaves hastate, three-lobed, broader than long (except the uppermost), the upper surface velvety with dense pubescence, bright green, the lower surface whitish, densely canescent; petioles glabrous; calyx prominently ribbed; bractlets about one-half the length of the calyx, velvety; petals 12–15 cm. long; style stout, its branches arising from the same point.

I have seen specimens of *H. grandiflorus* from several places in Florida. Michaux says it also occurs in Georgia and Mississippi. On the other hand *H. lasiocarpus* ranges from Louisville westward and north in the Mississippi Valley to Illinois and Missouri. Cavanilles gives a good figure of *H. lasiocarpus* which in no way suggests Michaux's plant.

NYMPHAEA ORBICULATA n. sp.

Perennial, robust, pubescent, except the upper surface of the leaves, bright green. Leaves orbicular or nearly so, 3–4 dm. in diameter, somewhat crisped, the lobes at the base conspicuously overlapping, the upper surface rough with irregular papillae, the lower surface pubescent with short shining silvery hairs, marked with numerous secondary nerves; petiole variable in length, faintly striate, clothed with silky pubescence, like the lower surface of the leaves; flowers about 6 cm. in diameter; sepals oblong-obovate, 5 cm. long, obtuse, somewhat eroded, faintly ribbed; disk 2 cm. in diameter; fruit subglobose, 4–5 cm. in diameter; seeds ovoid, 4.5 mm. long, with a ridge on one side.

Collected in a small lake near Thomasville, southern Georgia. In flower and fruit throughout July. Differs from *Nymphaea advena* in its orbicular leaves with their overlapping basal lobes, the peculiar pubescence and the ovoid seeds instead of the more nearly globose ones of that species.

CROTONOPSIS SPINOSA Nash, Bull. Torr. Club, **22**: 157. 1895.

I met with quantities of this very distinct species during the past summer in the valley of the St. Mary's River, in southeastern Georgia. In the field, as in the herbarium, this plant does not suggest *C. linearis*, its mode of growth and habit separating it at once. In Engler & Prantl we notice a figure of *P. spinosa*, which is intended to represent *P. linearis*. This shows that the species was collected some years ago and that a specimen found its way to Europe.

RHEXIA FLORIDANA Nash, Bull. Torr. Club, **22**: 150. 1895.

This *Rhexia*, hitherto known from but a single locality in Florida, is now known to occur in Georgia. I collected fine specimens of it during the past season north of the St. Mary's River, in the neighborhood of hammocks, in Charlton county. Their characters show nothing different from the originals, except that my specimens are more robust.

JUSSAEA SUFFRUTICOSA L. Sp. Pl. 388. 1753.

Dr. Carl Mohr has found this plant established on the river bank at Mobile, Alabama. This is the first record of its occurrence within the Southern States.

GAYLUSSACIA URSINA (M. A. Curtis) T. & G.; Gray, Mem. Amer. Acad. (II). **3**: 49. 1846.

While in the mountains of northern Georgia, in the summer of 1893, I found this rare *Gaylussacia* at three localities. It is quite scarce in the canon at Tallulah Falls and produces little fruit, but some miles north, on the North Carolina boundary, the damp mountain slopes about Estotoah Falls and the Thomas Bald are covered with the shrub, growing from one to four feet tall and producing quantities of the large black fruit, which is not at all insipid, as has been stated. On some mountains it covers areas many acres in extent.

CYNOCTONUM ANGUSTIFOLIUM (T. & G.).

Mitreola sessilifolia var. *angustifolia* T. & G. Fl. N. A. **2**: 45. 1841.

Annual, or perennial (?), slender, glabrous, pale green and *Sabbatia*-like. Stems erect, 2–6 dm., simple or sparingly branched above, virgate; leaves varying from narrowly lanceolate, 2–4 cm. long, somewhat fleshy, becoming thin in drying, obtuse or acutish at the apex, entirely sessile or the lowest short-petioled, not prominently nerved; flowers usually in a somewhat compound terminal cyme; calyx narrowly campanulate, 2.5–3 mm. long, parted to below the middle, its segments ovate-lanceolate, obtuse, denticulate; corolla at length much longer than the calyx, whitish, 3–5 mm. long, marked with dark stripes (3 to each segment), its tube somewhat constricted at the throat, about as long as the linear-lanceolate, erect or converging, rather obtuse segments; capsule sessile or nearly so, 4 mm. long, its two horns slightly longer than the body, converging; seeds brown, .3 mm. long, ovoid, rather pointed at the apex, slightly and minutely pitted.

Original locality, Middle Florida. In wet places, southern Georgia and Florida.

RUDBECKIA BICOLOR Nutt. Journ. Acad. Phila. 7: 81 (1834).

This species of more western distribution has been collected in eastern Florida. Mr. A. H. Curtiss has found it growing in pine barrens near Jacksonville (no. 4759). Some years since he secured it in fertile fields in Duval county, but distributed it under the name of another species (no. 1423). In 1894 Prof. Tracy secured a remarkably slender form at Biloxi, Mississippi (no. 2896).

The Blue-eyed Grasses of the eastern United States (Genus Sisyrinchium).

BY EUGENE P. BICKNELL.

(PLATES 263–265).

No conclusive answer has yet been given to the old question whether there exists more than one East American species of Blue-eyed Grass. The common resource of throwing together under one name all eastern specimens belonging to the genus is easy botany but poor morals. Neither does the recognition of two forms or species satisfy the botanical conscience. It would appear that only when we take notice of three or more kinds of Blue-eyed Grasses do we find ourselves bearing somewhere near the truth. It matters little whether these *kinds* be rated, according to the conceptions of different minds, as species or as forms of less signal rank; the pith of the matter lies in this, that each kind upholds a certain definite type of individualization which has been established in nature.

I venture to propose a new eastern species in this confused genus only on the authority of facts perfectly clear to my mind. Nor do I doubt that any student who may approach the subject guided by out-of-doors study will reach views not greatly at variance with my own.

Nomenclature.

An inquiry into the nomenclature of the East American forms of *Sisyrinchium* discloses the unsuspected fact that our common Blue-eyed grass of the Atlantic States is without any available

name. The plant has been variously known as *S. Bermudianum* L., *S. angustifolium* Miller and *S. anceps* Cav. These names are in indiscriminate use to-day.

It has been a subject of disagreement whether the name *Bermudiana* of Linnaeus belongs more properly to the Bermudan than to the American plant. The title of the insular species is certainly not without a slight flaw of indirection; on the other hand it can scarcely be held that the claim of the continental plant is better founded—its support involves an undue insistence on merely technical points at best of uncertain bearing in this particular case. In these circumstances that course seems to be right which unreservedly concedes the name *Bermudiana* to the Bermudan plant.

But even in its time-honored employment in American botany the name *Bermudiana*, it appears, has been used to designate quite another form of *Sisyrinchium* than the one to which it was applied in Species Plantarum. Its application by Linnaeus was not at all, or only in doubtful part, to the plant of our Atlantic seaboard which has borne the name—the plant with broadly-winged, branching stem and subequal spathal bracts. The species which was primarily, if not solely designated by Linnaeus, is the plant of more northward extension, having a slender, simple stem and unequally bracted spathe, which has been known by Michaux's name, *mucronatum*. Linnaeus's description is distinctive of neither species, but his plant was based on Plukenet (Phyt. *pl. 61, f. 1.* 1691, and Almag. 345, 1696) and on Dillenius (Hort. Elth. 49, *pl. 41, f. 49.* 1732). Plukenet both by description and illustration is perfectly clear; his plant is the one we have been calling *mucronatum*. It may be added that the precedence given to the American over the Bermudan plant in Species Plantarum is in conformity with the numbering of Plukenet's figures, which, singularly enough, reverses the order of the figures themselve, and of the descriptions as well.

The exact plant of the Species Plantarum is so perfectly established by the primary reference to Plukenet that it is of little consequence to find that Dillenius is ambiguous. Watson, indeed, has interpreted the Dillenian plant as being the equivalent of our so-called *mucronatum*. Still, the figure in Hort. Elth. appears to

represent, in part at least, our Atlantic States plant, and it would thus seem probable that Dillenius actually had both species, but failed to distinguish between them. This, however, is fortunately not now material to the proper assignment of names.

First after Linnaeus, Miller (Dict. ed. VII., 1759) discussed the American plant, as he understood it, naming it *S. angustifolium* and citing Dillenius. To the extent of this citation the exact significance of Miller's name might be held to be doubtful, but his description, as Watson has emphasized, points unmistakably to our simple-stemmed plant. Whatever doubt of this might otherwise have been is forestalled by Miller himself. In his "Gardeners' and Botanists' Dictionary" (1807) he redescribes his plant in clear terms, adopting for it the name *S. anceps* Cav., and citing his own earlier name as a synonym. The bearing of *S. anceps* Cav. is not doubtful; the plant falls conclusively into line with that of Linnaeus and of Miller as our simple-stemmed species.

The true name of this plant is thus found to be *S. angustifolium* Miller, as Watson has already maintained (Proc. Am. Acad. **24**: 86–7).

The name *S. anceps* Cav. was adopted by Watson for our branched species on the ground that Cavanilles' illustration shows one plant bearing a short branch. The remaining evidence of the figures, as well as the unequivocal text, was thus quite unaccountably overlooked. As a matter of fact, also, *S. angustifolium* sometimes develops a short lateral branch, just as the figure shows.

Earlier than Cavanilles, Lamarck described the American plant as *S. gramineum* from specimens cultivated in France (Encyc. **1**: 408. 1783). His description is entirely satisfactory and identifies his plant perfectly with Miller's *S. angustifolium* described from specimens cultivated in England.

The synonomy of *S. angustifolium* will therefore stand as follows:

S. angustifolium Miller, Dict. ed. VII. (1759).
S. Bermudiana L. Sp. Pl. 954. In part. 1753.
S. gramineum Lam. Encyc. **1**: 408. 1783.
S. anceps Cav. Diss. **6**: 345. *pl. 190, f. 2.* 1788.
S. mucronatum Michx. Fl. Bor. Am. **2**. 33. 1803.

The first clear presentation of our branched species was by

Curtis (Bot. Mag. *pl. 464. 1799*), who gives an excellent illustration of our exact plant naming it *S. gramineum*. This name, however, as we have seen, was preoccupied through its use by Lamarck. The curious fact thus develops that this plant appears never to have been described under a name not a synonym of *S. angustifolium*. It may now, therefore be called *S. gramnoides*.

Our eastern Species of Blue-Eyed Grass.

SISYRINCHIUM GRAMINOIDES nom. nov.

S. gramineum Curtis, Bot. Mag. *pl. 464.* 1799. Not *S. gramineum* Lam. Encyc. 1: 408. 1783.

S. Bermudianum of American authors, not Linnaeus.

S. anceps S. Watson in A. Gray's Manual, Ed. 6, 515. Not Cavanilles.

Specific Characters: Green or subglaucous, drying dark; stem bifurcate, winged; leaves thin; stem and leaves with scabrous edges, 1″–3″ wide; bracts of spathe subequal, acuminate; floral-scales brownish-tinged; capsule large, 1½″–3″ wide; seeds ½″ or more in diameter, pitted.

Commonly over 1° high (6′–2°); green or somewhat glaucous, usually drying dark. Stems wing-flattened, mostly 1½″–2″ wide (1″–3″), the wing-margins perceptibly broadened upward from base to top. Leaves thin and grass-like, as broad as the stem and from one-half to three-quarters its length, or rarely equalling it, minutely serrulate or denticulate on the edges, as are the stem and the branches, or usually so. Stem dividing above or from about the middle into two (exceptionally three or four) branches 2′–8′ long, subtended by a conspicuous grass-like leaf which is slightly narrowed above the compressed-clasping base and broadened higher up, as are the larger basal leaves. Branches winged, mostly suberect and unequal, but variable, usually the inner one elongated and erect, the outer one about half its length, often curved, broader, sometimes over 1″ wide with its margins passing uninterruptedly into the continuous spathe; rarely the outer branch may be the longer, or the two may be subequal; occasionally the outer one divides into two peduncles subtended by a leafy bract. Not infrequently simple and leafless scapes rise among the normally branched ones, simulating the stem of *S. angustifolium*. Bracts of spathe usually green and herbaceous (sometimes purplish), compressed, usually serrulate-scabrous on the keel, the outer one with scarious margins usually only below the middle, subequal (occasionally the outer one is sowewhat elongated, es-

pecially when the scape is simple); inner bract narrowly acuminate or acute, 6″–10″ long. Hyaline floral scales narrow, becoming distinctly brownish-tinged. Divisions of perianth 4″–5″ long, 1½″–2″ wide, sparsely pubescent on outer surface. Young capsule pubescent as in our other species. Capsules usually 3 or 4 (exceptionally more) subglobose, about 2″ long and broad (1½″–3″), disposed to be spreading or even recurved on slender pedicels 8″–12″ long. Seeds .04–05 in. in diameter, black, globose, more or less pitted. (Plate 263.)

Eastern States south from Massachusetts, but exact distribution not well made out.

Grassy places generally, preferably in damp soil; sometimes it occurs in shaded woods, where it is deep green and forms large separate tufts producing a profusion of finally prostrate stems. In drier, open situations it is erect and somewhat glaucous; among deep grass in low grounds the stems may be weak and ascending, and the tufted habit nearly or quite lost.

Several specimens from coastwise localities from New Jersey southward agree in having three and four clustered branches, decidedly purplish spathes, narrow stem and narrow attenuate leaves. Specimens from Florida, which will doubtless prove to be separable, are coarser in habit with elongated narrowly attenuate, even flexuous leaves often exceeding the stem, short, clustered peduncles, the bracts of the spathe strongly white-margined, the inner bract commonly longer than the outer one, the hyaline floral scales long and often exerted beyond the bracts.

Sisyrinchium Atlanticum n. sp.

Specific Characters: Pale and glaucous, not drying dark; stem slender and wiry, branched, margined or narrowly winged; stem and leaves ¼″–1″ wide, very smooth, leaves rather stiff; bracts of spathe subequal; inner bract obtuse or truncate; floral scales silvery white; capules oblong ¾″–1½″ wide; seeds ¼″–½″ in diameter, pitted or nearly smooth.

Much slenderer than *S. graminoides*, when growing with it mostly taller. Pale and glaucous, not drying dark; very smooth except the branches and tips of the leaves which are minutely denticulate-scabrous. Stem often inclined or becoming prostrate, much longer than the leaves, 8′–2° high, slender and rather wiry, uniformly margined or narrowly winged, often subterete at base, usually less than 1″ wide, sometimes only ¼″, dividing above into

two (1–3) short slender branches, or the outer branch elongated as a spreading prolongation of the stem and again branched. Occasionally a simple stem is developed, its spathe sometimes showing a slightly elongated outer bract. Leaves rather firm and stiff, narrow, 1″ wide or less, attenuate often arcuate, from ¼–¾ the length of the stem. Stem-leaf much smaller and narrower than in *S. graminoides*, scarcely or not at all broadened above. Branches slender, even filiform, narrowly margined, especially the outer one, 1½′–4′ long, mostly short and subequal, either parallel or somewhat spreading, when branched again often widely spreading, geniculate at the node and bearing a secondary leaf. Stem and branches usually purple-spotted and slightly constricted at the nodes and below the spathes. Spathes as a rule plumper and more narrowed at the base than in *S. graminoides*, often deflected, the bracts subequal, somewhat membranous, usually purplish; outer bract commonly with white scarious margins extending to the tip; inner bract 5″–8″ long, broader than in *S. graminoides*, the tip white-scarious, rounded or truncate, or even retuse, the midvein excurrent as a minute point. Hyaline floral scales mostly longer and broader than in *S. graminoides*, clear white. Divisions of perianth generally shorter and broader than in *S. graminoides*, 4″–4½″ long, 1½″–2½″ wide, finely pubescent on outer surface. Capsules 2–7, usually 5, oblong, ¾″–1½″ wide, 1″–2″ long, at maturity more contiguous than in *graminoides* on shorter suberect pedicels, the valves usually thicker; pedicels often flattened and finely margined. Seeds .02–.04 inches in diameter, subglobose, dark, finely wrinkled-pitted to nearly smooth. (Plate 264).

East Massachusetts to Florida, mostly near the coast in sandy soil, or about the borders of salt marshes. It may be either densely caespitose or of scattered growth.

I have observed this plant closely for a number of years in Van Cortlandt Park, New York City, where it grows in abundance over a low field bordering a brackish marsh often in company with *S. graminoides*. The two plants as they grow together are seen to be clearly distinct and no intergrading forms are found. I have also collected the plant on the New Jersey coast, and Dr. Britton informs me that it is the common species on Staten Island.

SISYRINCHIUM ANGUSTIFOLIUM Miller.

Low, commonly 6′–8′ high (3′–14′), pale and glaucous, usually strict and stiff. Leaves narrow, from almost setaceous to 1″ wide (rarely more lax, and 1½″ wide), sometimes equalling or exceeding the stem but mostly about one-half its length; edges of leaves and stem either smooth or minutely serrulate or denticulate. Stem simple (rarely with a short lateral branch), narrow, ½″ or less to

1″ wide, slightly winged or merely margined, terminated by the solitary spathe, or with two spathes geminate within the enclosing outer bracts. Bracts often conspicuously purplish, very unequal, the outer one commonly twice the length of the inner, sometimes rigidly prolonged to four times its length, becoming over two inches long, sometimes minutely papillose or even papillose-puberulent; inner bract often appearing gibbous in the spathe, 6″–12″ long, attenuate or acute. Flowers variable, sometimes very delicate on slender curved pedicels, often large with the pedicels strict and erect; divisions of perianth sometimes 6″ long, the broader series 2½″ wide, minutely pubescent on outer surface; floral scales either clear white or brownish-tinged. Capsules 1–9, globose, often larger than in *graminoides*, on straighter, less exserted pedicels, seeds often larger than in *graminoides*, .04–.06 in. long, mostly obliquely obovate-oblong, often angled, brownish, smooth or with coarse shallow pitting. (Plate 265.)

In damp or dry soil, sometimes on sterile hills and in dry upland pastures.

From Newfoundland to Saskatchewan, south to Connecticut and New York and along the mountains to North Carolina, in the interior to Kentucky, Missouri and Kansas.

It would appear from the foregoing description of *S. angustifolium* that the species is subject to not a few rather striking variations. I have little doubt, however, that my description embraces rather a group of closely related plants than the mere range of variation shown by a single one. In the material at command, however, I cannot find any certain warrant for the subdivision of the group, nor can I fully assure myself as to the value of any one of the apparently several component forms. It is probable, indeed, that study of these plants in life shall have to lead the way to the correct understanding of their relationships.

The true *S. angustifolium* would appear to range from Newfoundland far westward through Canada and southward through the Alleghenies to North Carolina, finding in Connecticut and New York its southern limit near the coast. Specimens agree generally in drying blackish like *S. graminoides*, and in having the edges of stem and leaves decidedly rough-serrulate. At the southern limit of its coastwise range this form seems to show a closer affinity to *S. graminoides*, and it is in plants from this region that a short lateral branch is occasionally found. It is quite possible, therefore, that plants practically intermediate be-

tween this form and *S. graminoides* may occur, especially as starved forms of the latter would naturally tend to assume the general character of *S. angustifolium*.

An Allegheny Mountain form of *S. angustifolium* is very slender and delicate, with highly-colored spathe and linear-elongated outer bract; the edges of the stem, in certain specimens at least, is perfectly smooth. This form also turns blackish in drying.

Plants from the prairie region, from Minnesota to Kansas, do not blacken in drying, and commonly have the edges of the stem and leaves perfectly smooth. The bracts of the spathe are often minutely papillose or even puberulent, a character of which I have found no suggestion in eastern specimens. Both East and West, however, furnish ambiguous plants which seem to contradict the indications of the general run of specimens from each region.

Among the large number of specimens examined, three only have geminate spathes. These specimens are all from the same general region, viz., Kentucky, Missouri and Illinois. Collectors' notes on two of them record "flowers white;" another is labeled further by Dr. Englemann "*S. albidum*, Raf., Dry Hills, St. Louis, earlier than the blue form, May, 1863."

In Rafinesque's description of his *S. albidum** (Atlantic Journ. 17, 1832) we read "spathe unequally 4 valved," the habitat of the plant is given as "in West Kentucky." These developments certainly point strongly to the validity of *S. albidum* Raf., and suggest a promising subject of field study to anyone who may be in a position to prosecute it.

Three Editions of Stansbury's Report.

By Frederick V. Coville.

The report of Captain Stansbury's exploration of the Great Salt Lake, was published as Senate Executive Document No. 3, Special Sesssion (32d Congress), March, 1851, with the following title:

*It may be stated here as a matter of record that, eight years prior to his description of *S. albidum*, Rafinesque wrote the plant down without description as *S. album* Raf. So it will be found printed in the "First Catalogues and Circulars of the Botanical Garden of Transylvania University at Lexington, in Kentucky, for the year 1824," p. 16. This reference is wanting in Index Kewensis.

STANSBURY, HOWARD.

Exploration and Survey of the Valley of the Great Salt Lake of Utah, including a reconnoissance of a new route through the Rocky Mountains. Philadelphia; Lippincott, Grambo & Co. 1852.

Appendix D of this Report, by John Torrey, is entitled: "Botany. Catalogue of Plants collected by the Expedition." It occupies pages 383 to 397 and is accompanied by nine lithograph plates.

A second edition of the report, with the same title, was printed by order of the House of Representatives, the publisher being Robert Armstrong, of the City of Washington, in the year 1853, though all the copies of it I have seen bear at the top of the title page the same document legend as the first edition. In the second edition the type was entirely reset, but no new matter was added in the body of the report and the pagination is maintained almost precisely throughout. In the botanical appendix, however, which occupies the same pages as in the first edition and is accompanied by the same plates, there are a few important changes in the text. The principal one of these occurs on page 389, on which in the first edition the new genus Monothrix is described, and on the following page the species *Monothrix Stansburiana*. In the second edition the genus Monothrix is discarded, the name given for this plant being *Laphamia Stansburii* (Gray, Plant, Wright. 101. 1852), with the following footnote:

"The Laphamia of Dr. Gray, although published subsequently to Monothrix, must take precedence of that genus, as it now embraces one species with a pappus of many bristles, another with a bisetose pappus, and two other species that are quite destitute of a pappus; so that the latter name is no longer appropriate."

From this footnote it would appear that the generic name Monothrix has precedence over Laphamia, but an examination of the date of publication of the first part of Dr. Gray's Plantae Wrightianae and of the first edition of the Stansbury report shows that the former was issued in March, 1852, while the manuscript of the latter was not submitted to Congress until April 19, of the same year. It is evident, therefore, that by the word "published" in his footnote, Dr. Torrey could not have meant what we now mean technically by that word. In both editions of the Stans-

bury report the plate of this plant, No. 7, bears the name "Monothrix stansburiana Torr." It is evident that Monothrix does not have priority over Laphamia.

Another change in the second edition is the reduction on page 389 of *Linosyris serrulata*, published on the same page of the first edition, to varietal rank under *Linosyris viscidiflora* without any citation of the first edition. On page 395 there is also a change in the remarks under *Abronia mellifera* Doug., the wording in the first edition being as follows: *A. micranthus*, Torr. in Fremont's first Report, p. 96, and in Emory's Report, p. 149, seems to be a particular state of the plant *Abronia mellifera*, in which it bears very small but perfect flowers. In those works I noticed the peculiarity of the embryo; the inner cotyledon being constantly abortive." The second edition reads, "In Fremont's first report, p. 96, and in Emory's Report, p. 149, I noticed a peculiarity of the embryo; the inner cotyledon being constantly abortive."

Beyond these differences no change of importance occur in the botanical appendices of the two editions, the matter being almost identical, page for page and line for line, with the exception of the correction of a few typographical errors.

Stansbury's report appears also in a third form which hardly merits the name of an "edition." It is the same precisely as the first edition, being printed from the same stereotype plates, except the title page, which is reset and dated 1855. In the absence of any reference to an earlier edition the date is wholly misleading.

Studies in the Leguminosae.—I.

By Anna Murray Vail.

NOTES ON MEIBOMIA.

Meibomia arenicola.

Hechysarum lineatum Michx. Fl. Bor. Am. 2: 72. 1803. Not of Linn. Syst. Ed. 10, 1170. 1759.

Desmodium lineatum DC. Prodr. 2: 330. 1825.

Meibomia lineata Kuntze, Rev. Gen. Pl. 196. 1891.

MEIBOMIA MICHAUXII.

Heysarum rotundifolium Michx. Fl. Bor. Am. 2: 72. 1803.
Not of Vahl, Symb. 2: 81. 1791.
Desmodium rotundifolium DC. Prodr. 2: 330. 1825.
Meibomia rotundifolia Kuntze, Rev. Gen. Pl. 197. 1891.

MEIBOMIA TENUIFOLIA (T. & G.) Kuntze.

In Bull. Torr. Club, 19: 110, this species, owing to a mistake on a written label, was erroneously recorded as having been collected in Missouri. The label should have read Mississippi.

MEIBOMIA LONGIFOLIA (T. & G.).

Perennial, erect, 6 dm.–1 m. high or more; stems stout, branched, angled, striate, channelled, uncinate-pubescent mostly in lines, sometimes becoming glabrate; stipules ovate-lanceolate, cuspidate, persistent or caducous; petioles 1.5–5 cm. long, striate, pubescent; stipels 5 mm. long or more, often persisting; leaflets 5–11 cm. long, 2.5–5 cm. wide, lanceolate, lanceolate-ovate, or ovate, acuminate, slightly rugose or scabrous with few scattered hairs and becoming glabrate above, much lighter and appressed-pubescent or villous beneath, the terminal leaflet usually much larger than the lateral ones; panicles spreading flowers numerous, showy, about 1 cm. long on slender spreading uncinate-pubescent pedicels; bracts 5–10 mm. long, ovate or ovate-lanceolate, striate, ciliate, caducous; calyx 3 mm. long, the lobes attenuate, the upper one 2-toothed, the others somewhat longer; corolla lilac-purple, showy; legume 4–6-jointed, 3.5–6 cm. long, uncinate-pubescent, straight or somewhat rounded and angled on the dorsal suture, deeply triangular on the ventral, or nearly equally sinuate above and below, the 8–10 mm. long, reticulated joints almost lozenge-shaped; stipe about the length of the calyx-lobes.

June–September.

A characteristic species with the habit, leaf-form and legume of *M. bracteosa* and the pubescence of *M. Canadensis* and appearing as if intermediate between the two. The type specimen is without mature fruit.

Original locality, Arkansas. Type in Herb. Columbia University.

DISTRIBUTION. Illinois (Mead); Missouri (Bush, without fruit)? Kansas (Carleton); Arkansas (Nuttall); Louisiana (Hale); Alabama (Rugel).

SYNONYMY. *Desmodium Canadense* var. *longifolium* T. & G. Fl. N. Am. 1: 365. 1838.

Desmodium longifolium Nutt.; T. & G. Fl. N. A. 1. c. as synonym.

MEIBOMIA PSILOPHYLLA WRIGHTII (A. Gray).

Desmodium Wrightii A. Gray, Bost. Journ. Nat. Hist. 6: 177. 1850.

Meibomia Wrightii Kuntze, Rev. Gen. Pl. 198. 1891.

This species is so close to *M. psilophylla* (Schlecht. Linnaea, 12: 310. 1838) as to scarcely even merit varietal rank. It is, however, variable, and the North American form seems to have somewhat broader leaves and slightly larger loment-joints.

DISTRIBUTION: Texas, New Mexico and Mexico.

M. psilophylla (Schlecht.) occurs in South Mexico.

MEIBOMIA ANGUSTIFOLIA (H. B. K.) Kuntze, Rev. Gen. Pl. 187 1891.

Hedysarum angustifolium H. B. K. Nov. Gen. 6: 517. 1823.

Desmodium angustifolium DC. Prodr. 2: 328. 1825.

Desmodium gramineum A. Gray, Pl. Wright. 2: 46. 1853.

Meibomia graminea Kuntze, Rev. Gen. Pl. 198. 1891.

Grass Notes.

BY F. LAMSON-SCRIBNER.

(PLATE 266.)

JOUVEA STRAMINEA Fourn.

In Vol. 17: No. 9, of the BULLETIN I figured and described a grass collected on the sandy seacoasts of Lower California by Dr. Palmer, referring it with a sign of doubt to *Jouvea straminea* Fourn. The genus *Jouvea* was based upon female plants alone; and, while the characters presented by Palmer's specimens, which include both male and female plants, accorded in the main with the description given by Fournier, there were some differences in the details, which gave a doubt to the identification. Fournier did not recognize the male plants which were in the same collection (Liebmann 479 and 480) that contained the specimens upon which the genus was founded. He mistook these, as others had done before him, for species of *Distichlis* and referred them to

Brizopyrum pungens (Rupr.), under which name they were distributed. Last year Dr. Palmer collected the same grass in the vicinity of Acapulco, which he discovered in 1890 on the seashore in Lower California, and also another species which proves to be the true *Jouvea straminea* of Fournier, as determined by a comparison with the type. What I believe to be the male plants of the same species were also found, and from material gathered it has been possible to certainly identify Fournier's species, to ascertain that the grass of Palmer's earlier collection represents a distinct species of the same genus and also to determine with reasonable certainty that the male plants of the latter are the *Brizopyrum pilosum* of Presl.

From a study of the material now in hand, it appears to me that Fournier and others have heretofore misunderstood the structure of the female inflorescence. What has been described as a terminal, cylindrical and acute spike appears to me to be a 2 to 4-flowered spikelet with a remarkably developed rachilla in which the florets are embedded, the whole simulating in some degree the spikes of *Monerma* or *Lepturus*. These spikelets are lateral, sessile and articulated with the main axis, from which they readily separate at maturity. They are subtended by and partly enclosed within the leaf-sheath, from whose axil they originate, and there is a strong and well developed prophyllon on the rachis of the spikelet, above which is the articulation. This position suggests that what we here term a spikelet may be only a modified branch (but spikelets of the more familiar type are in reality modified branches), and the articulation of this with its own axis and the peculiar structure of the female flowers does, I think, warrant the use of the designation here given. These spikelets are without empty glumes, unless the leaf subtending them be regarded as a glume. In the staminate spikelets also the empty glumes are often entirely wanting, although occasionally we find one, and more rarely two, present. The glume which covers the female flower, called "*gluma exterior*" by Fournier, is really a flowering glume with its edge grown firmly to the rachilla for about one-half its length in *Jouvea straminea*, the upper portion being free, but the edges so extended and grown together as to form a closed cavity, having a small aperture only at the apex, through which

the stigma protrudes. In *Jouvea pilosa* this glume is grown to the rachis or rachilla for nearly its entire length, the free portion being a short narrow tube as illustrated on page 228, Bull. Torr. Club, Vol. 17: and in *fig. n, pl. 106*. This glume is very firm and rigid, the texture of the dorsal portion being like that of the axis which bears it. It immediately subtends the pistil, which in *Jouvea pilosa* has no palea, but which in *Jouvea straminea* has a very delicate, hyaline, 2-keeled palea between it and the main axis. In many of the specimens examined there was above this palea a second pistil, imperfectly developed, enclosed within a sac of delicate texture, but otherwise formed like the sac which encloses the perfectly developed flower. This second and imperfectly formed pistil is raised above the other on a very short stalk, and the details of the structure here described are shown in *fig. e, pl. 266*. The presence and position of the second pistil in the cavity containing the female flower certainly suggests the idea that the organ here designated as a spikelet is really a branch bearing two or four 1 to 2-flowered female spikelets, which are subtended by and enclosed within a single glume, or entire and leafless blade-sheath.

JOUVEA STRAMINEA Fourn. Bull. Soc. Bot. Belg. 15: 475. Not Scribner. Liebmann, no. 738.

Found by Dr. Palmer (no. 443) in February, 1895, growing in large masses at the edge of a low damp place in a garden near the river bank at Acapulco. The plant produces long runners. There is a little uncertainty as to the staminate plants of the true *Jouvea straminea*. Dr. Palmer assures me, however, that the staminate specimens which he gathered were collected in the same locality as the female plants and were found growing with them. The staminate plants are more slender, with rather longer and less rigid leaves than those which are undoubtedly the male plants of *Jouvea pilosa*. There is little difference, however, to be noted between the spikelets of the two.

JOUVEA PILOSA n. n.

Jouvea straminea Scribn. not Fourn. *Rachidospermum Mexicanum* Vasey. Bot. Gaz. 15: 110. *Uniola pungens* Rupr. in Bull. Acad. Roy. Brux. 9: excluding the synonym. *Brizopyrum pilosum*

Presl, Rel. Haenk. 1: 280. Presl's species was founded upon the male plant. This species is represented in the National Herbarium as follows: Liebmann 480 (Santa Cruz) ♂; E. Palmer 124 (La Paz, 1890) ♂, ♀; Xantus 121 (Cape San Lucas) ♂; Brandegee 42 (San José del Cabo, 1890) ♂, ♀; Palmer 1384 (Manzanillo, 1894) ♀; Liebmann 479 (St. Augustine, 1842) ♂.

Jouvea straminea Fourn. is readily distinguished from *Jouvea pilosa* by its more slender habit, less rigid leaves, less crowded in-

Upper part of the culm of Jouvea straminea. m, a, and a′ the main axis s, s′, Lateral borne spikelets.

florescence, more slender and porportionately much longer spikelets. In *J. pilosa* the glumes are grown to the axis for almost their entire length, and there are no paleas or rudimentary pistils of a second flower within the floral cavities.

ANDROPOGON FLORIDANUS n. sp.

Culms smooth, stout, 4 to 6 feet high, or 2 to 3 feet high and more slender; sheaths scabrous, the lowermost slightly compressed, loose, and much exceeding the internodes, the upper shorter than the internodes and terete; ligule very short, ciliolate, auricled; leaf-blade 10 to 24 inches long, 3 to 5 lines wide, scabrous beneath, minutely strigose-pubescent above, at least near the base, very acute. Panicle 12 to 30 inches long, very much branched, branches ascending. Racemes 1 to 2 inches long, slender, in 2's, rarely in 3's or 4's, finally exserted, peduncle bearded at the apex; rachis slender, 8–10 jointed, the joints shorter than the sessile spikelet, bearded, the hairs near the summit of each joint 3 lines long. Primary spikelet wanting, the pedicel exceeding the sessile spikelet in length, and bearded with hairs equalling those of the joints of the rachis. Sessile spikelet 2 lines long, lanceolate-acute, with a few short hairs on the callus; first glume bicarinate, smooth and somewhat depressed on the back and nerveless between the keels, which are minutely aculeolate-scabrous above, glabrous below; second glume boat-shaped, rather broadly lanceolate, very acute, 1-nerved, scabrous on the keel above, ciliate on the hyaline margins; third glume about as long as the second, lanceolate or oblong, hyaline, ciliate on the margins; the fourth or flowering glume lanceolate, about as long as the third, margins ciliate, terminating in a slender awn, which is 5 to 6 lines long; palea hyaline, about 1 line in length. Spathe about 2 to 3 inches long, narrow, and closely enveloping the slender peduncles of the finally exerted racemes. Awn slightly twisted near the base, the column included within the glumes.

A stout grass of the low pine barrens, with elongated leaves and rather narrow, elongated, much-branched panicle of silky-bearded racemes. G. V. Nash, 1572, August, 1894.

ANDROPOGON ELLIOTTII GLAUCESCENS n. var.

Glaucous throughout, less branched than in the species, and the somewhat stouter racemes more densely silky-bearded.

High pine lands in the vicinity of Eustis, Lake county, Fla., G. V. Nash, 473.

ANDROPOGON ELLIOTTII LAXIFLORUS n. var.

Lower sheaths, especially those of the innovations, more or less densely clothed with fine soft hairs; culms densely silky-bearded just below the nodes; upper sheaths not approximate and inflated as in the species, but remote and close; racemes 2 to 3 inches long, the joints equalling or exceeding the spikelets.

Florida, Nash, no. 1738. 1894.

PANICUM (DIGITARIA) GRACILLIMUM n. sp.

A slender perennial 2 to 3 feet high, with very narrow elongated leaves and small spikelets, racemose along the main axis and the slender branches. Culms smooth, with one or two joints near the base; sheaths very long, striate, silky-villous below, otherwise smooth; ligule membranous, 1 to 2 lines long, fimbriate, decurrent, pubescent on the back; leaf-blade 6 inches to a foot long or more, 1½ lines wide, those of the intra-vaginal innovations much narrower, smooth beneath, long and rather densely pilose-hairy near the base above; otherwise minutely scabrous. Inflorescence 15 inches long, the raceme-like branches 7 to 9 inches, main axis, branches, and pedicels scabrous. Spikelets irregularly scattered along the branches and main axis, two to four together, on slender appressed pedicels which equal or exceed the spikelets in length; pedicels pubescent at the base. Spikelets 1 line long, oblong-lanceolate, acute; empty glumes, two, the first broadly obtuse, one-fourth as long as the spikelet, scari-

ous, 3-nerved, smooth, the second 5–to 7-nerved, a little shorter than the third glume, obtuse; third glume rigid, subcoriaceous, very dark-brown, finely striate and minutely apiculate, closely enveloping the palea, which is of similar texture.

Described from No. 1192 Nash, collected on high pine land in the vicinity of Eustis, Lake county, Florida, July, 1894.

Explanation of Plate 266.

Fig. a. A portion of the ♂ spikelet.

Fig. b. A single floret with a portion of the rachilla of the same.

Fig. c. A ♀ spikelet partly enclosed within the sheath of the subtending leaf.

Fig. d. Lower part of the female spikelet including one floret, the upper part of which is free from the rachilla (d′).

Fig. e. A longitudinal section through a portion of d showing the base of the outside of the flowering glume (e′), the prophyllum (h) to the branch which supports the pistil and a glume (i) which encloses a second but imperfectly formed pistil. This is raised a little above the fully developed pistil, the plumose stigmas of which protrude from the small opening at the apex of the floret.

New or noteworthy American Grasses.—IV.

By Geo. V. Nash.

Panicum consanguineum Kunth, Enum. Pl. 1: 106. 1833.

Panicum villosum Ell. Bot. S. C. & Ga. 1: 124. 1817. Not Lamarck, 1791.

Dr. John K. Small collected in Georgia, in 1895, a *Panicum* which well accords with the description given by Elliott of his *P. villosum;* in fact, it agrees so closely that I have little hesitation in referring it to that species, especially in view of the fact that it comes from a section of the country with the flora of which Mr. Elliott was familiar. Dr. Small secured the early and simple state of this grass in the Ocmulgee River swamp, below Macon, in May; the later and much-branched form was collected by him at Darien Junction, McIntosh county, in June.

The name *villosum* had been previously applied by Lamarck to an entirely different plant, so Elliott's name becomes a homonym. The oldest available name, so far as I have been able to ascertain, is the *P. consanguineum* of Kunth, who founded his species on the *P. villosum* of Elliott. A number of different forms have been referred from time to time by various authors to this species, but I

have hitherto seen none that so perfectly answers to Elliott's description as does this plant.

A description of Dr. Small's plant is appended:

Culms at first erect and simple; later decumbent or nearly prostrate and branching at every node, forming large spreading clumps. In the early and simple state the whole plant, excepting the glabrous basal leaves and panicles, is strongly villous; in the late and much-branched stage the culm leaves are often glabrous; nodes barbed; sheaths shorter than the internodes, even on the branches; ligule a dense ring of long white hairs; basal leaves spreading, lanceolate to ovate-lanceolate, 2.5–6 cm. long, 7–12 mm. wide; culm leaves linear-lanceolate, erect, stiff, particularly in the branched state, the primary ones somewhat narrowed into a rounded base, 6–12 cm. long, 4–7 mm. wide, the leaves on the branches 3–7 cm. long, 3–5 mm. broad, rounded or truncate, but not narrowed at the base; panicles glabrous, the primary ones exserted, ovate in outline, 5–6 cm. long, the branches not numerous, ascending, 2.5 cm. long or less, flexuous, bearing 2–6 spikelets, the secondary panicles much smaller, concealed among the leaves, their branches shorter and erect with fewer spikelets; spikelets obovate, 2.5 mm. long; first scale whitish, nearly orbicular, about one-quarter as long as the spikelet which it clasps at the base, glabrous, one-nerved; second and third scales of equal length, broadly oval, green and membranous, 7-nerved, strongly papillose-pubescent; fourth scale broadly oval or approaching orbicular, apiculate, abruptly narrowed at the base, striate, white and chartaceous, about 2.25 mm. long; palet chartaceous, slightly shorter than the fourth scale.

PANICUM ERECTIFOLIUM nom. nov.

Panicum sphacrocarpon var. *Floridanum* Vasey, Bull. U. S. Dept. Agric. Bot. Div. 8: 33. 1889. Not *P. Floridanum* Trin.

Glabrous. Culms 4–6 dm. tall, erect, stiff, simple or sparingly branched, leafy; sheaths loose, often ciliate on the margins, the basal ones crowded and overlapping, those at the middle of the culm about one-half as long as the internodes, the uppermost sheath usually elongated; ligule a ring of short hairs; leaves ciliate toward the base, the basal ones spreading, ovate-lanceolate, 1.5–4 cm. long, the next succeeding erect, lanceolate, acuminate, 9–11-nerved, longer and gradually reduced in size toward the summit of the culm, the lower 7–14 cm., the uppermost 2.5–6 cm. long, panicle finally long-exserted, ovate to oblong in outline, 7–12 cm. long, its branches ascending, much divided, the lower ones 3–7 cm. long; spikelets numerous, purplish, shorter than their pedicels, oval, obtuse, about 1.5 mm. long; first scale mem-

branous, one-quarter as long as the spikelet or less, ovate or triangular, 1-nerved; second and third scales of equal length, membranous, more or less pubescent, 7-nerved; fourth scale yellowish white, chartaceous, broadly oval, about 1.5 mm. long; palet chartaceous, about as long as the fourth scale.

This grass appears to be confined to Florida, and does not occur plentifully. It was found in some abundance by the writer in an old muck bed near Eustis, Lake Co., in 1894, No. 1012. The plant collected by A. H. Curtiss, No. 3599, and distributed as *P. microcarpon*, belongs here.

Its affinity is with *P. sphaerocarpon* Ell., but it is distinguished from that species by its longer and erect leaves, the smaller spikelets and the more southern range.

PANICUM VILLOSISSIMUM n. sp.

Whole plant densely villous. Culms 3–6 dm. tall, erect or ascending; nodes barbed; sheaths about one-half as long as the internodes; ligule a ring of long hairs; leaves linear-lanceolate, 5–10 cm. long, 4–9 mm. wide, erect, somewhat narrowed toward the rounded base, yellowish green, 7–11-nerved; panicle long-exserted, broadly ovate in outline, 6–10 cm. in length, its branches spreading or ascending, somewhat flexuous, the lower ones 3–6 cm. long; spikelets shorter than their pedicels, elliptic, 2.5 mm. long, about 1.25 mm. broad, obtuse or acutish, purplish; first scale membranous, ovate, acute, 1-nerved, one-third to one-half as long as the spikelet; second and third scales equal in length, membranous, 7-nerved, strongly papillose-villous; fourth scale chartaceous, yellowish white, elliptic, slightly exceeding 2 mm. in length, 1.25 mm. broad, acutish, somewhat striate; palet chartaceous, about as long as the fourth scale.

A distinct and well-marked species. Collected by Dr. John K. Small in the Ocmulgee River swamp, below Macon, May 18–24, 1895. Only the early and more simple state was secured. The later and much-branched condition is probably very similar to many other forms of the dichotomum group.

PANICUM WEBBERIANUM n. sp.

Whole plant, with the exception of the lowermost sheaths and the ciliate margins of the upper ones, glabrous, the culms, sheaths and leaves often purple. Culms 2–4 dm. tall, erect or ascending, rigid, more or less branched, forming moderate-sized clumps; sheaths loose, shorter than the internodes; ligule very short, mi-

nutely ciliate; leaves lanceolate, 4.5–9 cm. long, 7–14 mm. wide, somewhat narrowed toward the rounded or subcordate sparsely ciliate base, usually erect, smooth or sometimes a little roughened, 7–11-nerved; panicle finally long-exserted, ovate in outline, 6–9 cm. long, its branches widely spreading, rarely ascending or reflexed, more or less flexuous, the lower ones 2-3 cm. long, the ultimate divisions of the longer branches generally spreading; spikelets equalling or longer than their pedicels, elliptic or obovate, 2.5 mm. long; first scale nearly hyaline, broader than long, rounded at the apex, about one-quarter the length of the spikelet, which it clasps at the base; second and third scales of equal length, green and membranous, 7-nerved, minutely pubescent, the latter enclosing a small narrow palet about one-half as long as the scale; fourth scale yellowish white, chartaceous, oval, about 2 mm. long, 1.3 mm. broad, minutely pubescent at the obtuse apex, striate-punctate, enclosing a palet of equal length and similar texture and a perfect flower.

Collected by the writer on the edge of a clay pit in the low pine land at Eustis, Lake Co., Florida, May 16–31, 1894, No. 781. This has somewhat the appearance of the *P. demissum* of Trinius, particularly as to the panicle, but the leaves and spikelets are considerably larger, and the whole plant more robust.

Named in honor of Mr. H. J. Webber, of Eustis, Florida.

PANICUM VIRGATUM BREVIRAMOSUM n. var.

Glabrous throughout. Culms 1 metre tall or less, erect, slender, strict, purplish at or near the nodes; sheaths shorter than the internodes; ligule a ring of long hairs; leaves narrowly linear, 1.5–3 dm. long, 3–7 mm. wide, long-acuminate, usually narrowed toward the base, erect, strict, smooth beneath, a little roughened above; panicle oblong, 9–13 cm. long, 3–5 cm. wide, its branches ascending, the lower ones 5 cm. long or less; spikelets numerous, slightly less than 3 mm. long, purplish; first scale about one-half as long as the spikelet, acute or obtuse, 5–7-nerved; second and third scales equal in length, acute, 7-nerved, the intervals between the nerves of the former gradually decreasing in width, the interval between the midnerve and first lateral nerve of the third scale much wider than the intervals between the other nerves, palet empty, hyaline, shorter than the scale; fourth scale elliptic, 2.25 mm. long, obtuse, chartaceous, whitish, enclosing a palet of similar texture and a perfect flower.

Collected by Dr. Small in clay soil in the pine lands about Augusta, Georgia, where it was common, June 27–July 1, 1895. The culms occur singly or two or three together, not forming

large clumps as does the nothern form; the thick scaly root-stocks, usually so manifest in the type, are almost entirely wanting in this form. The spikelets are smaller, hardly 3 mm. long, and the branches of the panicle much shorter than in any form hitherto observed. These differences, together with its more southern range, would seem to warrant its separation as a variety.

CHLORIS TEXENSIS n. sp.

Smooth and glabrous, light green. Culms 3–6 dm. tall, flattened at the base; sheaths compressed, those at the base of the culm short and crowded, the uppermost one elongated; leaves 2.5–15 cm. long, 2–6 mm. wide, smooth beneath, scabrous above and on the margins, obtuse; inflorescence usually exserted; spikes 5–8, 10–18 cm. long, pilose at the base; rachis triangular, scabrous on the angles, flexuous; spikelets about 4 mm. long, exclusive of the awns; empty scales narrowly lanceolate, acuminate, 1-nerved, scabrous on the keels, the first about two-thirds as long as the second which about equals the third scale; third scale slightly less than 4 mm. long, lanceolate, 3-nerved, ciliate on the margins toward the apex, the rough awn 6–8 mm. long, inserted just below the apex, the keel sometimes sparingly pubescent, scabrous toward the summit; fourth scale 2–3 mm. long, lanceolate, the acute apex about even with the summit of the third scale, the scabrous awn 4–5 mm. long, inserted just below the apex.

Collected in Texas by both Thurow and G. C. Nealley.

Related to *C. verticillata* Nutt., but abundantly distinct The generally longer and narrower leaves, the spikelets more appressed to the rachis, the narrower and differently shaped third and fourth scales readily separate it from that species. In *C. verticillata* the third scale is 2.5 mm. long or less, and the fourth scale not over 2 mm. long, obovate or obovate-cuneate, truncate or obliquely so at the apex.

A new Achimenes from Bolivia.

ACHIMENES HEPPIELLOIDES Fritsch, sp. n. Caulis ruber, breviter hispidus. Folia magna, inferiora longe petiolata, ovata, subacuminata, crenato-serrata, pilis brevissimis dense tecta, subtus pallidiora. Flores in axillis foliorum superiorum multo minorum solitarii, longe pedicellati. Pedicelli pilis articulatis hispidi. Calycis laciniae lineares, corollae tubo multo breviores. Corollae coccineae tubus elongato-cylindricus, paulo ampliatus; limbus brevis-

simus. Antherae breves, cohaerentes. Ovarium omnino inferum. Stylus valde elongatus, pubescens. Stigma stomatomorphum.

Species corollae forma, imprimis lobis brevissimis inter Achimenis species insignis, Heppiellam revocans, sed antheris cohaerentibus ovarioque omnino infero ab illo genere diversum.

Specimen unique. Collected by Miguel Bang, the special locality not stated. H. H. RUSBY.

Botanical Notes.

Vienna Exchange Office for Cryptogams.—J. Brunnthaler, IV., Wiedner Hauptstrasse, 91, Vienna, Austria.

A circular has just been received, which is printed in German, French and English (?) setting forth the rules and regulations of this office, which proposes to negotiate sales and exchanges of all the cryptogams of the world for the benefit of its members, reserving 25% of the specimens for the trouble. The members are requested to send in their lists of desiderata, and duplicates, before the 15th of September, and the valuation of European specimens will be made at the office. Foreign specimens must be valued by the sender. All postage is charged to the members' account. The surplus remaining will be sold at prices specified in the annual catalogue. E. G. B.

Sisymbrium altissimum L.—For first record of this plant in Canada (1885) and its subsequent wide distribution, see Macoun Cat. Can. Plants, 2: 305 and J. M. Macoun, Contr. Can. Bot. 3: 146. At Indian Head, Assiniboia, Prof. Macoun called the attention of the residents to this weed and advised the adoption of measures to exterminate it. Nothing was done, however, and at that place in 1895, 1,200 acres of it were plowed under. It is the worst "tumble weed" in the Canadian Northwest.

J. W. MACOUN.

Melanthium latifolium longipedicellatum.—On the 24th of July, 1892, I collected at White Sulphur Springs, Va., on a steep wooded slope bordering a mountain stream, a specimen in full flower bearing all the general characters of *Melanthium latifolium* Desr. The plant was over three feet tall, and the inflorescence about one foot

long. It has a half dozen lower leaves, each 12 to 15 inches long, and but 6″ to 10″ wide in the widest parts. The pedicels of the flowers in the upper half of the inflorescence are fully 12″ long; and in the lower half from 6″ to 10″. Other herbarium specimens examined show flowering pedicels from 2″ to 7″ long, and fruiting pedicels not exceeding 8″; while the broadest lower leaves vary from 12″ to 28″ broad, though in one specimen but 7″.

Only a single specimen of this plant was found by me in a hurried and limited search, and no fruit was seen. This may possibly be only an extreme form of *M. latifolium;* or it may prove to be a distinct species. It seems to me to be at least a distinct variety. Its narrow leaves and very long pedicels give it a strikingly distinct appearance; and from the latter characteristic feature, I call it, provisionally, var. *longipedicellatum.*

ADDISON BROWN.

APRIL 10, 1896.

Rubus montanus Porter. Since the specific name of this *Rubus*, published in the BULLETIN, **21**: 120, is antedated by that of Ortman, it must needs be replaced by another, and I can find no better one than *Allegheniensis.* The species ranges from the mountains of New York southward and is everywhere known and recognized among the people as the *Mountain Blackberry.* It differs from *R. villosus* in being less robust and tall, but especially in the character of the fruit, which is smaller, scarcely fleshy and possessed of a peculiar spicy flavor, from ⅓ to 1 inch or more in length and often oblong and tapering toward the end in the manner of the little finger.

THOS. C. PORTER.

Dr. Chapman's Collections.—Mr. George W. Vanderbilt has purchased the large herbarium of southern plants, collected and arranged by Dr. Chapman. It will serve as a nucleus for the scientific collections in connection with the arboretum and systematically managed forest at Biltmore, N. C.

Reviews.

Plant-breeding. L. H. Bailey. pp. 290, 20 cuts. Cloth, $1.00. Macmillan & Co., New York. 1895.

Taken in its entirety this is certainly an excellent little work. It is written in a popular style and is especially adapted to students and teachers of horticulture.

From the author's discussion of variation we would gather that he is a devout Darwinian. Some of his statements are misleading, or to state it more clearly, unscientific. For example, to speak of "Fortuitous Variation," or to state that the "inherent plasticity of organisms" permits the variation of organisms "without any immediate inciting cause," is certainly unscientific. Likewise the statement "that very many—certainly more than half—of the organisms which are born are wholly useless in the struggle for life and very soon perish." The very fact that an organism exists is evidence that it cannot be "useless."

In the main the author's opinions are sound and up to date. Many of his conclusions are based upon personal experiments. The subject-matter is well arranged. All, whether laymen or scientists, will find this book both interesting and instructive.

A. S.

Contributions from the U. S. National Herbarium, Volume III.

During the past few months four numbers of this important publication of the U. S. Department of Agriculture, Division of Botany, have been issued. The first of these is:

"No. 3, issued September 14, 1895. Flora of the Sand Hills of Nebraska, by P. A. Rydberg."

This number is of more than ordinary importance, as the collector himself has given us the result of his work and observations in the field. Introductory to the "Catalogue of Species" there are fifteen pages devoted to a discussion of the character and resources of the country. Here we find that the sand hills, like the sand dunes of the coast, are of a changeable and migratory nature, and if it were not for certain grasses which bind the sand together the wind would be continually changing the face of the country, and the ever-drifting sand would give very little chance for vegetation to thrive.

The region fails naturally into five divisions, each of which is described, and the characteristic plants noted. Examples of the weeds, native trees and shrubs and native forage plants, are listed. From an agricultural point of view the sand hills country

does not amount to much. It is shown that at one time it was covered with a forest, and suggestions are made as to how they can be reforested. *Pinus ponderosa* and *Pinus divaricata* are mentioned as species most likely to flourish.

In the "Catalogue of Species" about six hundred are enumerated, only one of which is new. This is *Carduus Plattensis*, represented by a rather indifferent plate, instead of the fine ones usually found in these publications.

"No. 4, issued November 23, 1895. Report on a Collection of Plants made by J. H. Sandberg and assistants in Northern Idaho in the year 1392, by John M. Holzinger."

Taking into consideration the equipment of this expedition, and the means at its command we would expect much valuable information as the results of the five months work for which it was commissioned. On the contrary, the specimens themselves are about all the department has to show for its outlay.

Instead of a discussion of the geographical features of this interesting country, its resources, the distribution of species and other information which it is especially designed to bring out in these publications, there is a bare list of camping places, and a statement of how long the party staid at each camp. Even this meagre summary is not correct. It is stated that "the second camp was located in the neighborhood of Lake Waha, some twenty miles south of Camp 1. The party remained in that vicinity from May 20 to May 28, collecting the plants numbered 194 to 263. The Lake Waha region and Wiessner's Peak were the principal localities visited from this camp."

Now Lake Waha and Wiessner's Peak are separated by at least 75 miles of pretty rough country, and without the aid of a substantial pair of wings no member of the party could have gone there and returned in eight days. Wiessner's Peak, at the head of navigation on the St. Joseph river, 30 miles from Harrison, was visited from Camp 8, located at Farmington Landing, on Lake Coeur d'Alene, opposite Harrison, by the assistants of the expedition.

The two plates are excellent, but on page 212 a new species is described under the name of *Cardamine Leibergii*, while the accompanying plate bears the name *Cardamine Sandbergii*. The

same lack of care is evidenced in at least one other instance. On page 223 we find "*Rosa* sp.," followed by a short description. In the index of species, page 281, this plant, No. 572, bears the name of *Rosa Sandbergii* Holzinger." If this can be considered as publication, *Rosa MacDougali* Holzinger, published in the February *Botanical Gazette* becomes a synonym.

Whoever is responsible for the notes concerning habitat, etc., of the species collected, often shows complete ignorance of the subject. The expression "Valley of Lake Waha" is frequently used. Lake Waha, situated well up among the Craig Mountains, is not provided with a valley. It is simply a depression surrounded by steep slopes. It is fed by a mountain stream, and has a subterranean outlet. The following are a few instances of erroneous data:

Ranunculus glaberrimus is credited as "common on moist ground, island in Clearwater river near Upper Ferry, above Lewiston." The plant to which the above name is applied does not occur on the low, sandy islands, but is occasionally met with in the pasture land near the summit of the plateau, and on the grassy slopes, growing in stiff black soil.

Actaea spicata rubra is stated to be "common in woods at 900 meters altitude, Craig mountains, valley of Lake Waha." It is by no means common, and was found in the cañon of the Sweetwater, beyond Lake Waha.

Trifolium longipes latifolium was not at all "frequent on grassy slopes, Craig mountains." It was collected in an open place on the west side of the lake, and only a few plants were found in a very circumscribed area.

Under *Spiraea betulifolia* Pall. it is said that "No. 539 is not typical. It has the corymb somewhat elongated, as in *P. salicifolia*, and may be a hybrid." It most certainly is an entirely different plant from No. 299, and in the living state has nothing in common with that plant. If it is a hybrid it is a rather one-sided one, for *Spiraea Douglasii Menziesii* was the only other one collected at that point.

Crataegus tomentosa is reported as growing in "copses, frequent, Craig mountains." A single tree was found in a little meadow below the outlet of the lake. It grew along a fence, and was not in a copse.

Under *Amelanchier alnifolia* two numbers are given. No. 26 is probably that species, but No. 53, which is reported from "copses near Upper Ferry, Clearwater river above Lewiston," is a distinct plant in appearance, habit and habitat. Instead of growing in copses, it is the only shrub found on the upper exposed slopes on the right bank of the Clearwater above Camp 1. It usually occurs as a solitary bush on the edge of the plateau. No. 26 does occur in copses along the tributaries of the Clearwater, but at much lower elevations.

A very curious statement is made under *Aster Sibiricus:* "On precipitous ledges of granite, subalpine, near the south end of Lake Pend d'Oreille." How this little plant only can be subalpine, while *Parnassia fimbriata*, *Hedysarum flavescens*, *Eriogonum ovalifolium* and *Carex capillaris*, which grew in company with it at an elevation of about 2500 feet, are not subalpine, is quite mysterious.

Verbena bracteosa is supposed to be "frequent on rocky hillsides, valley of Clearwater river." It was collected at one place, in low sandy ground, on the right bank of the river, opposite the upper island above Camp 1.

Eriogonum flavum is reported as growing "in exposed crevices, Packsaddle Peak." It was collected on a granite outcrop, about 2,000 feet below the summit of Packsaddle and on another ridge where it found a foothold in the scanty covering of soil which here and there clothed the large area of flat rock.

Under *Polygonum imbricatum*, we find "June 16 (No. 411)." The writer collected that number, and knows for a certainty that it should be *Polygonum polygaloides*. No. 403, which is not mentioned except in the index as "blank," is probably *P. Watsoni* (*P. imbricatum*).

A map of the region traversed would be a very fitting help to a better understanding of the report.

It is to be regretted that the criticism of this work should be adverse, but the fact remains that much of the attempted information is utterly worthless and misleading, as will be seen from the few notes recorded above.

"No. 5, issued December 14, 1895. Report on Mexican Umbelliferæ, mostly from the State of Oaxaca, recently collected by

C. G. Pringle and E. W. Wilson, by John M. Coulter and J. N. Rose. Descriptions on Plants, mostly new, from Mexico and the United States, by J. N. Rose."

Mexico, which has yielded so many new and rare species brought to light by the untiring work of Mr. Pringle, now gives us four new genera and twenty-seven new species of Umbelliferæ. Fifteen species had previously been reported from Oaxaca, as against forty-two in this late collection. They were collected at seven stations, the altitudes varying from 6000 to 11400 feet. Geographical notes are given about each station, and the altitude at which each species was collected is noted. This latter feature is especially commendable. Altitudinal distribution is an important factor in plant life, yet it has up to the present time received scant attention.

The second part, in addition to Mr. Rose's work, contains desriptions of Malvaceæ by Mr E. G. Baker, and of Cucurbitaceæ by Prof. A. Cogniaux.

Mr. Rose gives an illustration and a history of *Ligusticum verticillatum*, a long lost and puzzling plant, described by Hooker as *Angelica verticillata*.

A new genus *Thurovia* is established, named after the collect tor, Mr. F. W. Thurow, of Hockley, Texas. This curious little plant is said to be common northwest of Houston. Another nice piece of work is the disentangling of two species of *Tradescantia*, *T. brevifolia* and *T. leiandra*, which for a number of years have been sadly confused. The number is profusely illustrated, containing twelve plates.

"No. 6, issued January 15, 1896. Botany of Yukutat Bay, Alaska, by Frederick Vernon Coville, with a Field Report by Frederick Funston."

This number, nine pages of which are taken up by the field report, yields much welcome information concerning this far northern part of our country. As few persons have any idea of the labor and hardships which a professional collector experiences even within the pale of civilization, to them Mr. Funston's sum total of 3,000 specimens and 164 species may seem a small number for over three months' work. However, when we take into consideration the difficulties under which he labored, the result is very good.

Of the 107 days spent in the field, 83 were rainy, and ten cords of wood were consumed in keeping up fires to extract the moisture from his dryers.

The report shows that the flora of Yakutat Bay is divided between two zones, one extending from sea level to timber line, the other from timber line to the perpetual snow line. The general character of the flora is circumpolar.

The remarks concerning the distribution of certain species, and others whose fruits are used as food by the natives, are quite interesting. Five of the latter are enumerated: *Viburnum pauciflorum*, *Vaccinium ovalifolium*, *Rubus spectabilis* and *Fragaria Chilocnsis*. These are mixed with seal oil and devoured with great gusto by the Indians. The bulbs of *Fritillaria Kamschatensis* and the leaf-stalks of *Heracleum lanatum* are also eaten.

Only one new plant is described, *Juncus falcatus Alaskensis*, but full notes are given under nearly all of the species enumerated. A. A. HELLER.

Musci americae septentrionali exsiccati. Notes sur quelques espéces distribuées dans cette collection par F. Renauld et J. Cardot. Bull. Herb. Boiss. **4**: 1–19. 1896.

This is an enlarged and extended copy of the notes distributed in 1894 to the subscribers to the sets of their exsiccatae, including the numbers from 1–250. Most of the changes have already been recorded, either in these manuscript notes or in the check list published by the same authors in 1893. The following, however, are new: *Hypnum micans* Sw. is transferred from *Raphidostegium* to *Isopterygium*; No. 132, distributed as *Hypnum fluitans*, is referred to the var. *Jeanbernati* Ren.; *Grimmia pachyphylla* Leiberg has been changed to *G. Leibergii* Paris, Index Bryologicus, there being already a *G. pachyphylla* C. M. from Tierra del Fuego; *Dicranella Howeii* is reduced to a form of *D. varia*; *Dicranum Mariae* Holz. ined. is compared with *D. strictum* and *D. rhabdocarpum*: *D. fuscescens* var. *Eatoni*, is described and compared with var. *flexicaule*; *Fissidens falcatulus* is said to be too close to *F. exiguus* Sull.; *F. pauperculus* Howe is said to agree with descriptions of *F. Arnoldi*; *Bryum sanguilentum* is raduced to a subspecies of *B. capillare*; *Camptothecium lutescens* is said to include both *Hypnum fulgescens* Mitt. and *Homalothecium pseudosericeum* C. M.;

Hypnum orbicularicordatum Ren. & Card. sp. nov. is described as differing from *H cordifolium*. No. 216, *Barbula fragilis*, was sent to them by Mr. J. M. Holzinger, named *B. tortuosa* var. *dicranoides*. The mistake is credited to me. The facts are these: Mr. Holzinger sent me some specimens of this moss named by him "*Timmia winonensis* n. sp. ined." I suggested that it was very close to *Barbula tortuosa*, but did not agree exactly with specimens of my own collecting in the Adirondacks, of which I sent him a duplicate, suggesting that it might be the var. *dicranoides* (Ferg.) described by Braithwaite. I did not compare them, nor did I send them to M. Cardot; therefore Mr. Holzinger must be held responsible for any mistakes in the matter. E. G. B.

New or less known Species of Pleurocarpous Mosses from North America and Europe. N. C. Kindberg, Rev. Bryol. **22**: 81-88. 1895.

Thirty-two species are described, of which all but six are North American, and twenty-two will be found listed in Kindberg's check-list, the other four having been discovered since that list was published. Several varieties are raised to specific rank. The descriptions are brief and mostly comparative. The following is the list of species described: *Antitrichia gigantea, Clasmatodon rupestris, Thamnium micro alopecurum, Pleuroziopsis alaskana, Isothecium brachycladon, I. Howei, I. obtusatulum, Leskea Cardoti, Amblystegium pseudo-confervoides, Eurhynchium pseudo-velutinoides, E. acutifolium, E. subcæspitosum, E. Macounii, Hypnum molluscoides, H. pseudo-complexum, Camptothecium aureolum, C. leucodontoides, Brachythecium cavernosum, B. calcarcum, B. subintricatum, Hypnum subsecundum, H. microreptile, H. reptiliforme, H. filiforme, H. subcomplexum* and *Fontinalis gigantea*. Many of these are founded on very slight differences, as the names imply. E. G. B.

New or less known Species of Acrocarpous Mosses from North America and Europe. N. C. Kindberg. Rev. Bryol. **23**: 17-23. 1896.

Twenty-six species are described, all but three of which are based on American specimens sent to him by Prof. Macoun. All but one are said to be new species or have new names, the worst illustration of this being *Orthotrichum lyellioides* Kindb. n. sp., which is founded, as far as we can determine, on *O. papillosum* Hpe., thus

adding another synonym to the six already perpetrated by European bryologists for the varieties of this much-abused American species. We note three *new species* (?) from eastern localities, all of which are cited with his usual clearness and succinctness, *Drummondia canadensis*, *Weisia pusilla* and *Grimmia Austini*. He also founds a new genus to include *Mnium lucidum* and *M. simplex* in the following words:

"The both species are very differing from the other ones of *Mnium* that they are consisting at least a subgenus (or rather a proper genus), to which I propose the name *Roellia* to the honor of Dr. J. Roell." E. G. B.

Ueber die Brutkorper der Georgia pellucida und der Laubmoose ueberhaupt. C. Correns. Ber. Deutsch. Bot. Gesell. **13**: 420–442. *pl. 33.* 1895.

The author proves conclusively that the habit of reproducing asexually is not confined to the leafy moss-plant, but is also resorted to by the protonema, which forms irregular masses of gemmae, differing from the regular cup-shaped ones which are so characteristic of this genus. He disagrees with previous writers in attributing the gemmae to modified antheridia, claims that they originate from the paraphyses, and states that the green globose terminal cell of the paraphyses in *Funaria*, is a step in this direction. He places the *Georgiaceae* between the *Andreaeceae* and the *Bryineae*, as a well-marked and distinct group. He also studied the gemmae in *Webera annotina*, *Orthotrichum Lyelli*, *O. obtusifoliun*, *Encalypta streptocarpa* and *Zygodon viridissimus*. E. G. B.

Revue des Travaux publiés sur les Muscinées depuis le ier Janvier 1889 jusq'au ier Janvier 1895. L. Géneau de Lamaliere. Rev. Gen. Bot. **8**: 40–48. Ja. 1896. To be continued.

This series of papers is to include only the mosses of France, it seems, though the author does not say so. He proposes to review the works in the following order, first those treating of geographic distribution; second, the descriptive works; third, those on anatomy, and lastly, those on the physiology of the Mosses. He solicits contributions from authors. E. G. B.

Proceedings of the Club.

Tuesday Evening, March 10, 1895.

In the absence of the President and both Vice-Presidents, Dr. Schneider occupied the chair, and there were 25 persons present.

Miss Josephine E. Tilden, University of Minnesota, Minneapolis, Minn., was elected a corresponding member. Miss Constance Lily Rothschild, Mr. Frederick Ehrenberg and Mr. Thomas P. Gilman were elected active members.

Mrs. Britton reported that the Instruction Committee had published its prospectus for the summer courses of instruction, which would commence on March 19th.

Mr. Theodore G. White read his announced paper, "The North American Species of the Genus *Vicia*," illustrated by a full suite of specimens. The paper was discussed by Dr. Britton, Dr. Schneider and others.

Mr. Geo. V. Nash read his announced paper on "New Florida Plants," richly illustrated by specimens. The paper was discussed by Dr. Britton, Dr. Small and others.

Mrs. Britton reported having seen *Tussilago Farfara* in full bloom already this season on Staten Island.

Dr. Britton spoke of the purchase for the New York Botanical Garden of Mr. J. B. Ellis' collection of fungi, with a large part of his library. The collection contains two or three thousand types, nearly all published sets of exsiccatae and a great number of unique specimens.

Wednesday Evening, March 25th, 1896.

Vice-President Allen in the chair, and 39 persons present.

Mr. W. A. Bastedo was appointed to act as Secretary during the absence of Dr. Rusby in South America.

Dr. J. S. Boynton and Mrs. Amos Rogers were elected active members.

Under the head of new business, Dr. Britton reminded the Club of the summer outings, and moved that a Field Committee be appointed by the chair. Carried. The Vice-President then appointed Dr. Britton as chairman of the committee, the other members of the committee to be selected by him.

Dr. Britton exhibited the fourth fascicle of Messrs. Collins, Holden & Setchell's "Phycotheca Boreali-Americana," and spoke of the value of this work.

Dr. Britton also called attention to a sedge, *Remiria maritima*, recently found at Lake Worth, Florida, but having a wide distribution in tropical maritime regions.

The announced paper of the evening was then read by Miss Alexandrina Taylor, entitled "A Comparative Study of the Superficial Periderm in a number of species of *Salix*." This was accompanied by diagrams illustrating the work. In the superficial periderm of these genus there are many variations from that selected as the type by Sanio, and the object of this study was to see if, by examining a greater number of species, one might not be found which might more justly be called the type of the genus. The paper was commented upon by Dr. Britton and Dr. Allen.

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